



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,762	03/22/2004	Adrian P. Kightlinger	006401.00466	1235
22908	7590	11/01/2005	EXAMINER	
BANNER & WITCOFF, LTD. TEN SOUTH WACKER DRIVE SUITE 3000 CHICAGO, IL 60606			WHITE, EVERETT NMN	
			ART UNIT	PAPER NUMBER
			1623	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/805,762

Applicant(s)

KIGHTLINGER ET AL.

Examiner

Everett White

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 48-63 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 48-63 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date Jun. 20, 2005.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

Art Unit: 1623

### DETAILED ACTION

1. The amendment filed August 18, 2005 has been received, entered and carefully considered. The amendment affects the instant application accordingly:

- (A) Claims 1-47 have been canceled;
- (B) New Claims 48-63 have been added;
- (C) Comments regarding Office Action have been provided drawn to:
  - (I) 102(b) rejection, rendered moot by new ground of rejection over newly cited US Patent.

2. Claims 48-63 are pending in the case.

3. The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1623

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 48-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eastman (US Patent No. 4,837,314, already of record) in view of Tuschhoff et al (US Patent No. 3,422,088, newly cited).

Applicants claim a method for preparing a granular, non-pasting, hydroxyalkylated cold water soluble starch, comprising the steps of: providing a starch; and reacting said starch in an aqueous slurry with a starch hydroxyalkylating agent in the presence of an alcohol and an alkali metal at a temperature effective to produce a granular, non-pasting hydroxyalkylated starch having a level of hydroxyalkyl substitution of about 10% or greater; and crosslinking said starch with a poly-functional crosslinking agent. Additional limitations in the dependent claims include the method wherein said poly-functional crosslinking agent is selected from among phosphorus oxychloride and epichlorohydrin; the method carried out at a specific temperature and time range; the method wherein said hydroxyalkylating agent is propylene oxide or ethylene oxide.

The Eastman patent discloses preparation of a cold-water soluble etherified starch derivative which may comprise contacting a non-derivatized, non-crosslinked granular starch starting material with an aqueous lower alkanol solution, which may be an inherent part of the etherification reaction (see column 3, last paragraph), which involve the use of a monofunctional etherifying agent. See column 4, 2<sup>nd</sup> paragraph of the Eastman patent, for examples of monofunctional etherifying agents that may be used to carry out the instantly claimed method. Also, see column 5, 2<sup>nd</sup> paragraph of the Eastman patent, wherein it is stated that etherification procedures are typically conducted under alkaline conditions (e.g., in the presence of an alkaline material such as alkali metal oxides or hydroxides). The process described for the preparation of cold-water soluble etherified starch derivatives in the Eastman patent embraces the instantly claimed method for preparing a hydroxylalkyl starch, which is granular and cold-water soluble. See column 1, 2<sup>nd</sup> paragraph wherein the Eastman patent shows

Art Unit: 1623

that the etherified starch derivatives thereof include hydroxyalkylated starches. The instantly claimed method for preparing a granular, non-pasting, hydroxyalkylated cold water soluble starch differs from the preparation of a cold-water soluble etherified starch derivative of the Eastman patent by claiming crosslinking the starch with a polyfunctional crosslinking agent. However, the Tuschhoff et al patent shows that crosslinking granular hydroxypropyl starch is well known in the art. See column 2, 3<sup>rd</sup> paragraph, wherein Tuschhoff et al teaches reacting phosphorous oxyhalide with granular hydroxypropyl ceral starch. Phosphorous oxychloride is recited in Example 1 of the Tuschhoff et al patent. One of ordinary skill in this art would be motivated to combine the teachings of the Eastman patent with that of the Tuschhoff et al patent since both patents disclose preparation of granular hydroxyalkylated starches. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the process for preparing granular, cold-water soluble etherified starch derivative of the Eastman patent a crosslinking procedure in view of the recognition in the art, as evidenced by Tuschhoff et al patent, that a controlled amount of crosslinking of hydroxypropyl starch allows the starch to be freeze-thaw resistant.

6. Applicant's arguments with respect to claims 48-63 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Arguments Against the Eastman Patent***

7. Applicants argue that the Eastman patent repeatedly teaches narrow conditions should be used to avoid pasting of the starch, thus teaching that the starch prepared therein is a pasting starch. This argument is not persuasive because the teaching of the Eastman patent to avoid pasting of the starch is a teaching of preparation non-pasting starch as instantly claimed.

#### ***Information Disclosure Statement***

8. The information disclosure statement filed June 20, 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in

Art Unit: 1623

the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Summary***

9. Claims 48-63 are rejected.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Examiner's Telephone Number, Fax Number, and Other Information**

11. For 24 hour access to patent application information 7 days per week, or for filing applications, please visit our website at [www.uspto.gov](http://www.uspto.gov) and click on the button "Patent Electronic Business Center" for more information.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is (571) 272-0660. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

Art Unit: 1623

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, can be reach on (571) 272-0661. The fax phone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

  
E. White

  
James O. Wilson  
Supervisory Primary Examiner  
Technology Center 1600